## REMARKS

Claims 1-26 are pending in the application. Claims 1-26 were rejected. Claims x are amended. Claims 1 and 26 are the independent claims. Reconsideration of the amended application is respectfully requested.

The Examiner rejected claims 1, 2, 26, and 27 under 35 USC §102(b) as being anticipated by Busse et al. The Examiner also rejected claims 3-25 and 28-48 under 35 USC §103(a) as being unpatentable over Busse et al. The Examiner acknowledged that Busse et al. do not disclose:

a) that the visual image is presented on a viewing device created by the imaging data corresponding to the imaged object, to be viewed by an operator to determine good or bad quality of the image;

b) application of the RF pulse corresponding to the angular precession frequency for a selected slice of the imaging object, and further application of an RF pulse of a different angular precession frequency, to select a respective different slice of the imaging object, if the viewer's subjective determination is that the visual image is of a good quality;

c) that the different slice to be imaged is an adjacent slice of the imaging object;

d) that the selected slice to be imaged and the adjacent slice overlap;

e) that the extent of the slice overlap is greater than 0% and less than or equal to 100%;

f) that application of RF energy to the object using a fast spin echo technique includes applying an RF pulse corresponding to the angular precession frequency for a selected slice of the imaging object, and applying another RF pulse corresponding to the angular frequency to select the same slice of the object, if the subjective determination is that the visual image is of bad quality;

g) that a bad visual image is tagged with the diagnostic information;

h) applying a pulse sequence of the fast spin echo technique for a slice of the imaging object with a particular angular precession, and automatically applying for another imaging slice a fast spin echo pulse sequence corresponding to a different angular precession frequency;

i) that the another imaging slice may be an adjacent slice;

j) that the two imaged slices overlap;

k) that automatic application of the last RF pulse corresponds to a final angular precession frequency to select the final slice, and that the image data is tagged by applying an RF pulse to the corresponding angular precession frequency;

l) using an NMR imaging machine in which a standing human being can be imaged;

m) that, after getting diagnostic information, the imaging object is moved and an RF pulse is applied which corresponds to the same angular precession frequency to select a different slice to be imaged;

n) that moving the object means changing the angle of the imaging object with respect to the uniform polarizing magnetic field;

o) using a multi-echo NMR imaging technique as the fast spin echo technique to get multiple echoes and tag each of them in sequence differently, using a 90-degree RF pulse at the center of any of the many different echoes, wherein the applied RF pulse has a phase such that the magnetization of the imaging object is forced in the direction of the uniform polarizing magnetic field, the multi-echo NMR imaging sequence has a first 90-degree RF pulse followed by a series of 180-degree RF pulses, the 180-degree RF pulses include n 180-degree pulses, which are followed by *n* echoes, applying the second 90-degree RF pulse at the center of the *n*th echo, such that magnetization of the imaging object is oriented in the direction of the uniform polarizing magnetic field;

p) that the 180-degree RF excitation pulse in the sequence generates a spin echo, which precedes the next 180-degree RF excitation pulse sequence, that the second 90-degree RF excitation pulse is applied at the center of the spin echo generated by the last 180-degree RF excitation pulse in the sequence, and that each spin echo is encoded differently; and

q) that the applied excitation pulse has a phase such that magnetization of the imaging object is focused in the direction of the polarizing magnetic field.

The Examiner stated that these 17 undisclosed elements are known in the art and are commonly used in NMR imaging processes. The Examiner asserted that it would

have been obvious to one of ordinary skill in the art to adapt each of the undisclosed elements as required to improve signal-to-noise ratio.

35 USC §103(a) sets forth that "[a] patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains." The Examiner asserted that the 17 undisclosed claim elements are known in the art, but did not assert or show evidence that these elements were disclosed at least as early of the filing date of the present application, or that of the parent application, as appropriate. That is, the Examiner showed no evidence that all of these 17 elements were publicly known to those of ordinary skill in the art at the time that the claimed invention was made.

In addition to providing evidence that all the claim elements were known to those of skill in the art, the Examiner is required to demonstrate a motivation to combine the teachings of the prior art, and a reasonable expectation of success of that combination. MPEP 2142. However, the Examiner did not demonstrate that, assuming that the elements were known to those of skill in the art, there was some motivation or suggestion, in the references themselves or in the knowledge generally available to one of ordinary skill in the art at that time, to modify the invention disclosed by Busse et al. or to otherwise combine the disclosed teachings in order to result in the claimed invention. Clearly, the required reasonable expectation of success that the combination of teachings

would result in the claimed invention is not provided, because no prior art references were provided and no teaching, motivation, or suggestion was demonstrated.

In view of the foregoing, it is respectfully submitted that the Examiner has not established a *prima facie* case of obviousness with respect to claims 3-25 and 28-48. See *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991); MPEP 2142. The Examiner merely stated that the undisclosed elements are known, and asserted that one of ordinary skill in the art would "adapt" each of the undisclosed elements as "required" to improve signal-to-noise ratio. Although the rationale to modify or combine the prior art does not have to be expressly stated in the prior art and may, under limited circumstances (MPEP 2144.03), be reasoned from knowledge generally available to one of ordinary skill in the art, the examiner must present a convincing line of reasoning as to why one of skill in the art would have found the claimed invention to have been obvious in light of the asserted teachings. *Ex parte Clapp*, 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985). It is respectfully submitted that the Examiner has not done so. References were not cited, and a single sentence was stated to explain the motivation to combine 17 substantial, undisclosed claim elements.

Applicant is unable to fairly rebut the Examiner's rejection based on obviousness, because the Examiner has failed to establish a *prima facie* case of obviousness. Thus, the burden remains on the Examiner to support the rejection, and Applicant is under no obligation to submit evidence of non-obviousness. See *In re Rinehart*, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976); *In re Linter*, 458 F.2d 1013, 173 USPQ 560 (CCPA 1972); *In re Saunders*, 444 F.2d 599, 170 USPQ 213 (CCPA 1971); *In re Tiffin*, 443 F.2d 394, 170 USPQ 88 (CCPA 1971), *amended*, 448 F.2d 791, 171 USPQ 294 (CCPA 1971); *In*

*re Warner*, 379 F.2d 1011, 154 USPQ 173 (CCPA 1967), *cert. denied*, 389 U.S. 1057 (1968). Further, Applicant's response to the rejection under 35 USC §102 depends in part on the obviousness rejection, because particular dependent claims might be argued to be allowable in view of as yet uncited references, which Applicant might want to amend into independent form. For this reason, Applicant reserves response to the rejection under 35 USC §102 until a *prima facie* rejection under 35 USC §103 is issued.

Based on the foregoing, it is submitted that all rejections have been addressed. It is therefore requested that the Examiner reconsider the rejection under 35 USC §103 and issue a new Action.

The due date for response to the Examiner's Action is extended by a petition submitted herewith. A check is also submitted, in payment of the fee for the extension. If the check is missing, or made out for an insufficient amount, please charge any deficiency to our deposit account, No. 501998, and notify us accordingly.

Respectfully submitted,

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Date

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